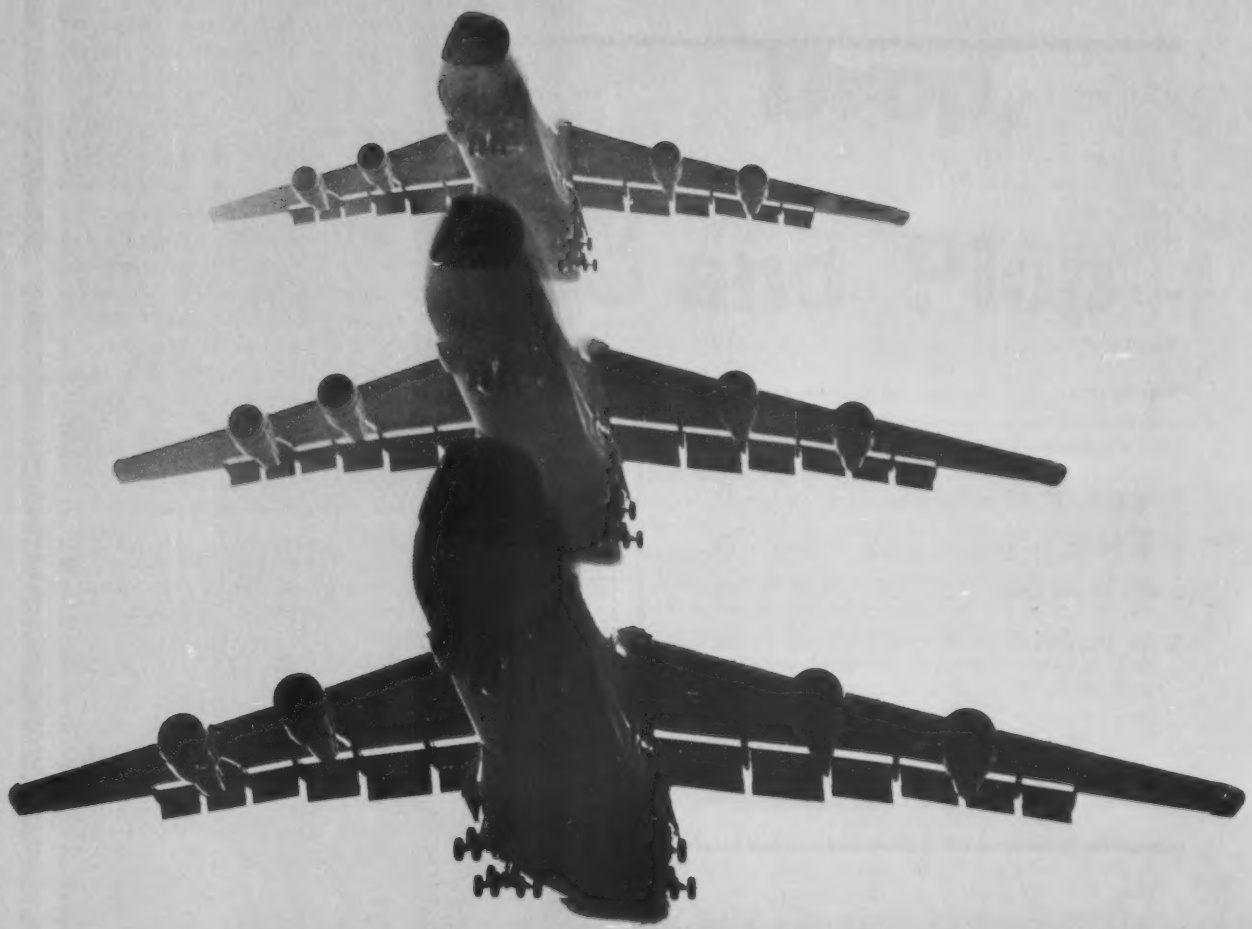
The MAC Flyer

AUGUST 1972



MILITARY AIRLIFT COMMAND
GEN JACK J. CATTON Commander
LT GEN JAY T. ROBBINS Vice Commander
BRIG GEN JOHN H. GERMERAAD Inspector General
COL N. C. FLYNN Chief, Safety Division

For Greater Efficiency
in MAC Air Operations

The MAC Flyer

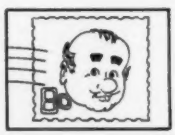
THE STAFF
MAJ RICHARD L. WING Supervising Editor
MAJ ROBERT L. GARDNER Associate Editor
CAPT PHILLIP R. BUDD Associate Editor
MARILYN A. BOLIEAU Managing Editor
TSGT WAYNE L. MILLS Art Director

AUGUST 1972 MAC RP 127-5 VOL XIX, NO. 8

Chop, Drop, and Plop 3
My Friend the Addict 8
One Landing 10
The Ravens 14
An Exceptional Unit 16
Dinghy on the Ice Cap 19
C. R. Terror 23
Letters to the Editor 26
Quick Stoppers 28

16

19


26

COVER: Take a nonprecision approach, stir in lousy weather and what do you get? See Chop, Drop, and Plop — page 3.

The MAC Flyer is published by the Safety Division, HQ MAC. The contents are informative and not regulatory or directive. All names in accident stories are fictitious and no information concerning aircraft accidents may be construed as incriminating under Article 31, UCMJ.
Contributions, comments, and criticisms are welcome. Write: The Editor, The MAC Flyer, MAC/IGYE, Scott AFB, IL 62225, or call: (618) 256-3534, Autovon 638-3534. The Editor reserves the right to change manuscripts to improve them or correct technical errors.
The magazine is available from: The Superintendent of Documents, Government Printing Office, Washington, DC 20402. Price: 20 cents per copy, $2.00 per year ($2.50 foreign).
Distribution F, X; OPR MAC/IGYE.

Squawk Box

George Gershwin said it for us in the score to *Porgy and Bess:* "Summertime, and the livin' is easy./Fish are jumpin', and the cotton is high./Your daddy's rich, and your momma's good lookin' . . ."

Yes, the good old summertime . . . *"The time of soda, and pretzels, and beer,"* as King Cole vocalized . . . new faces to impress with war stories . . . kids complaining of nothing to do . . . last vacations before school starts.

Summer is when you should sit in the sun (or shade, depending on how far north or south you are) and enjoy life; a time to philosophize on man and nature. So, to help you mull over the world as you watch the clouds roll by, here are some thoughts for a lazy summer day.

*If at first you don't succeed, try to hide your astonishment. — Anon.

*Experience is the name everyone gives to his mistakes. — Wilde

*What counts is what you learn after you know it all. — Anon.

*A clean desk is a sign of a sick mind. — Anon.

*Great men never feel great; small men never feel small. — Chinese proverb

*Conscience is the still small voice that tells us someone may be watching. — Mencken

*Reality is knowing that every silver lining has a cloud. — Perry

*Every man is a damn fool for at least five minutes a day. Wisdom consists in not exceeding the limit. — Hubbard

*The sky is one road all men should fight to keep free. — Tunner

*By the streets of "by & by" one arrives at the house of never. — Cervantes

Have a good summer, fans.

Consider the nonprecision approach: is it a good alternative to VFR-only, or is it a potential mousetrap inviting you to...

Chop, Drop, and Plop

MAKING A NONPRECISION approach down to or near minimums is typically harder or more demanding than executing a precision approach. By definition, the nonprecision approach provides no vertical information and the pilot must arrive at a position in space from which he can see the runway and safely complete his approach with only his altimeter and eyeballs to assist him.

Most of us know from experience that if we are too close to the runway when we see it, we can't land. Because we know this, we sometimes try to rush and get down low enough to be sure we see the runway. This method has become known in some circles as the chop and drop procedure. Unfortunately, it sometimes ends in a chop, drop, and plop!

An Accident

Here is an example of a pilot using this maneuver — unsuccessfully. A corporate jet pilot crashed during a nonprecision approach, killing himself, the crew, and seven passengers. The approach minimums were 400 feet and ¾ of a mile for a straight-in landing on a 10,000-foot-plus runway. The official weather forecast was sky partially obscured, 2,000 scattered, estimated 8,000 broken, and ¼ mile visibility with fog and calm winds. The

pilot confirmed the weather and then said he'd make the approach and take a look. Shortly after this radio call, a resident living close to the airport heard the airplane pass low overhead and then crash and explode.

The published approach procedure called for crossing the VOR, 3.2 miles from the runway, at 1,000 feet, and then descending to an MDA of 400 feet. From this altitude and using the visibility distance at a quarter of a mile, it would have taken a descent angle of over 10 degrees and a rate of descent of 2,000 feet per minute for the pilot to land his aircraft (see figure 1). As you'll see later, whenever the visibility minimum leads to a steep descent angle, the stage is set for an accident.

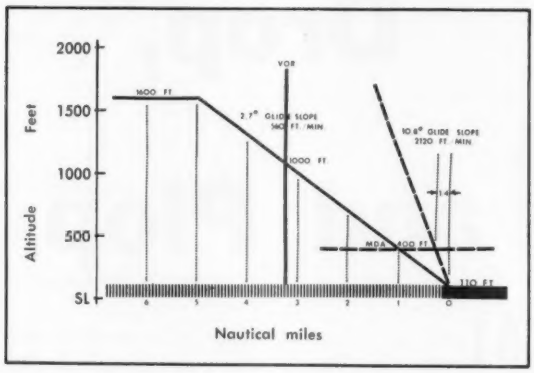


Figure 1. Profile of VOR Rwy 12L Victoria County

After any accident we always ask ourselves, "Why did this accident happen?" More specifically, how can we eliminate the risk associated with nonprecision approaches? Flight Safety Foundation divided the problem into three areas: altimetry, crew coordination, and the approach itself. Let's look at each of these.

Altimetry

During a nonprecision approach under adverse weather conditions, the altimetry system may be our only height reference above the terrain. With that thought in mind, can you think of some altimetry errors that have caused aircraft accidents?

The Flight Safety Foundation recently completed an altimetry study covering all phases of US civil and military aviation and non-US air carriers. The study covered seven years, 300 million flying hours, and over 41,000 accidents. In the study they found that altimetry was cited as a cause factor in about one percent of the accidents, with 0.6 percent from people errors (misreading or missetting) and 0.4 percent due to mechanical failure.

Of the three problem areas: altimetry, crew coordination, and the approach itself, altimetry has actually had little to do with accidents caused by being at the wrong altitude at the wrong place. Ten to 20 percent of all studied accidents were altitude related but only one percent was known to be caused by altimetry. Of these 10 to 20 percent altitude related accidents, most occurred in the landing approach phase in restricted visibility without the benefit of glide slope information.

The three-pointer type altimeter is misinterpreted the most, generally in 1,000 and 10,000 foot increments. The counter pointer also is occasionally misread by 1,000 foot increments. *(Note: Accidents caused by misreading often are difficult to identify unless one of the crew members survives the accident.)*

Misreading — A classic example of misreading a three-pointer altimeter involved two pilots in a T-bird. They attempted seven unsuccessful nonprecision approaches under near minimum conditions, then pulled up and ejected because they were out of fuel. Both pilots misread their altimeters by 10,000 feet.

Civilian pilots don't escape mind-bogglers either. In a recent Quick Stopper we reported on a commercial transport that had been cleared to cruise at FL 290. After letdown and level-off at 11,000 feet, the first officer looked out and saw tree tops. The pilot pulled up and returned to the correct altitude, and they continued the flight safely but a bit shaken. The flight recorder revealed that the highest altitude flown during the flight had been 19,000 feet instead of 29,000.

The counter drum-pointer and vertical tape altimeters currently installed or being installed on most jet aircraft should significantly reduce the misreading of altimeters.

Missetting — Accident records also included many examples of misset altimeters, especially at transition altitudes. While transition altitude is constant in the CONUS, it varies considerably in other countries and international fliers must monitor it very closely. Another common problem is the transposing of numbers. For example, 28.97 for 29.87 — this results in a 900 foot error. A third error is failure to change from sea level (QNH) to field elevation (QFE) setting. One pilot failed to set his altimeter to QFE but flew the approach as though he had. He ended up 1,250 feet too low and crashed a mile short of the runway.

Failures — Altimeter failures and malfunctions consisted of broken or defective parts, erratic and sticking operation, and leaky cases. Altimeter lag and foreign objects in the static system can also render your altimeter

unreliable. Should water, ice, or other contaminants clog or partially block the static system during descent, your altimeters will indicate altitudes higher than actual and your rate-of-descent indications will be less than actual. In fact, all your pressure instruments — altimeter, airspeed and vertical velocity — will be affected.

Crew Coordination

Let's now take a quick look at crew coordination. This activity is vital to all phases of air operations but especially so during a nonprecision approach. More than a few MAC aircraft have crashed short of the runway because crew members weren't working together to monitor altitudes.

The Flight Safety Foundation found that the crew's failure to monitor and cross-check flight instruments was the suspected cause factor in many accidents involving deviations from assigned or minimum altitudes. In MAC, crew coordination is taught continuously during TTU and local upgrade training, and our checklists are designed to force good crew coordination. But it is not automatic, and we still experience at least one accident a year triggered by poor crew coordination. When you fly into the side of a mountain, or overfly a beacon by 40 miles, or land four miles short of the runway, crew coordination is pretty bad.

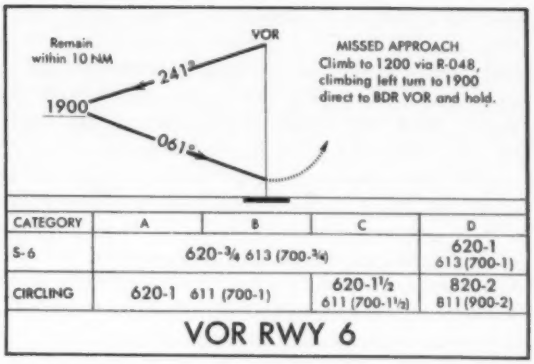
With good crew coordination and discipline, accidents like the one in last month's THE MAC FLYER story "Right On" won't happen. Coordination and discipline are even more critical during a nonprecision approach in weather.

The Nonprecision Approach

To understand nonprecision approaches, it is necessary to know their anatomy. Let's look at examples of approaches and at the descent angles required. This will be helpful in evaluating when and how an approach should — or should not — be made. As pointed out earlier, published weather minimums do not always provide for comfortable — or even safe — approaches.

Examples

An example of an approach that should not be attempted with minimum *legal* visibility, in a jet aircraft, is the VOR 6 approach at Bridgeport Municipal Airport in Connecticut. The actual approach is over water, but because of obstruction criteria the MDA is 620 feet. The runway elevation at the approach end is seven feet, giving a height above airport (HAA) of 613 feet. The



CATEGORY	A	B	C	D
S-6	620-¾ 613 (700-¾)			620-1 613 (700-1)
CIRCLING	620-1 611 (700-1)		620-1½ 611 (700-1½)	820-2 811 (900-2)

VOR RWY 6

Figure 2. Approach minimums for Bridgeport

minimum visibility for a straight-in approach for categories A, B, and C aircraft is three-quarters of a mile.

Assume that you are a pilot of a category C jet and are cleared for a straight-in aproach to runway 6; the weather is reported as 700 and ¾ with rain and fog. After you make your procedure turn at 1,900 feet as specified and drop down to 620 feet, you see water but nothing else. Exactly three-quarters of a mile out you spot the runway. Can you land?

Up until now, everything has been precisely legal and as reported. You maintained your altitude and saw the runway at MDA with minimum legal visibility. *But*, you were not anywhere near being "in the slot" for a visual landing. In fact, if you draw a line from the end of the runway to your 600-foot altitude at three-quarters of a mile from the end of the runway, it would make an approach slope of more than seven and a half degrees (see figure 3). Additionally, the three-quarters of a mile would be covered in 22 seconds since the approach

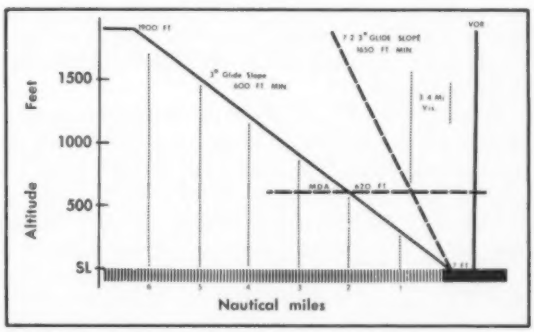


Figure 3. Profile of VOR Rwy 6 Bridgeport Municipal Airport, CT

speed of a category C airplane is 121-plus knots. Therefore, you would have to descend at 1,650 fpm with a peak rate of 2,200 fpm and haul your bird through a hairy flare to keep from driving the gear through the asphalt. What we're saying is that this approach *cannot* be made safely in a jet at legal minimums.

AFM 60-16, Chapter 8, says, "No person may operate an aircraft below the prescribed minimum descent altitude or continue an approach below the decision height unless: 1. The aircraft is in a position from which a *normal* approach to the runway of intended landing can be made; and 2. The approach threshold to the runway, or approach lights or other markings identifiable with the approach end of that runway, are clearly visible to the pilot." MACSUP 1 to AFM 60-16 says, "During a nonprecision approach, aircraft will not be allowed to descend below authorized minimums/MDA until the runway environment is in sight and the aircraft is in a position to descend for *normal* landing." (We added the italics.) In simple language, the MDA is maintained until the aircraft arrives in the normal "slot" with a normal visual approach assured. Once past this normal slot, your only option is to go around and try again.

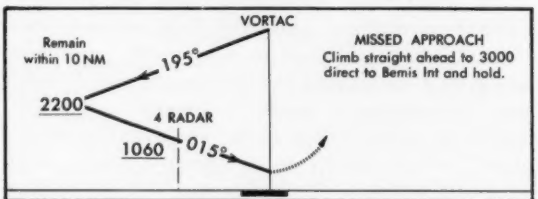
The important fact to remember is that you must place your aircraft in a position to make a normal approach to the runway you intend to land on. For most aircraft this equates to a three-degree glide slope, and this glide slope can be electronic, VASI, or your eyeballs. To fly a perfect three-degree glide slope, you must descend 316 feet per each nautical mile. This being the case, it's logical that there should be some relationship between the height above the airport and the visibility of the approach. Using 300 feet per mile as a rule of thumb, the visibility minimum should be one mile for a 300-foot HAA and two miles for a 600-foot HAA. Unfortunately, visibility minimums are *not* tied to the MDA or HAA. And for this reason, the nonprecision approach should not even be attempted at an airport like Bridgeport when weather is at minimums.

So what can be done about this type of approach? Well, there are two simple things that would solve the Bridgeport problem. For openers, if we can't install additional approach aids we should increase the visibility minimums to match the MDA. With an MDA of 600 feet and a new visibility minimum of two miles, you would arrive "in the slot" two miles from the runway and start descent from there.

A more realistic solution would be to add DME to the VOR. This way, a three-degree glide slope could be set up and with the use of an airborne glide path computer, minimums of 300 and 1 could possibly be achieved. However, since computed glide path is not a precision approach, and since there is a 125-foot radio tower nearby, it may be necessary to hold the minimums to 250 feet above the tower. An MDA of 400 with vis of one and a quarter or one and a half would be quite realistic.

With DME-computed glide slope you would know that when you reached the MDA you would either see the runway and be able to land, or you would initiate a go-around. You would arrive at the MDA "in the slot" and *know* that if you flew beyond this point that your approach would be too steep.

Now let's look at an airport that has a VORTAC and consider what effect DME or radar distances will make on the MDA and the suitability of the approach.



CATEGORY	A	B	C	D
S-1	1060-1 777 (800-1)	1060-1¼ 777 (800-1¼)	1060-1½ 777 (800-1½)	1060-1¾ 777 (800-1¾)
CIRCLING	1060-1 772 (800-1)	1060-1¼ 772 (800-1¼)	1060-1½ 772 (800-1½)	1060-2 772 (800-2)
VOR/RADAR MINIMA				
S-1	700-¾ 417 (500-¾)			700-1 417 (500-1)
CIRCLING	840-1 552 (600-1)		860-1½ 572 (600-1½)	1000-2 712 (800-2)
VOR RWY 1				

Figure 4. Approach minimums for Albany

The straight-in VOR RWY 1 approach for Albany County Airport, New York, calls for a decision height of 1,060 (HAA 777 feet) with a visibility of 1½ miles. The slope of a line connecting the 1,060 feet MDA at 1½ miles from the runway to the end of the runway is nearly 5 degrees (figure 5). The rate of descent would be a little over 1,000 fpm. While both of these figures approach the edge of safe operation, they are flyable. In contrast, with a three-quarter mile visibility and use of the radar or DME to find the four-mile fix, VOR/DME RWY 1 descent may be made to 700 feet (HAA of 417 feet). As shown in figure 5, the three-quarter mile visibility is not compatible with the "inslot" altitude — though minimum visibility of 1½ miles would put the airplane comfortably in the landing slot.

While it would be ideal to construct all approaches on the basis of a 3-degree glide slope, this is not always

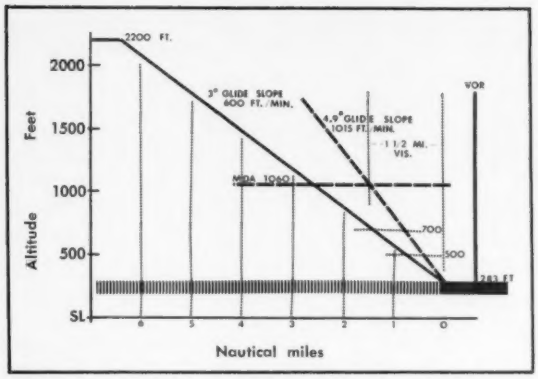


Figure 5. Profile of Rwy 1 Albany County, NY

possible because of obstructions along the approach path. However, as shown in figure 7, the approach path should be a straight line and the minimum visibility for the approach should allow you to see the runway environment from the MDA on a straight-line descent from the approach fix to the end of the runway. *(Note: MAC's requirement to cross the threshold at a minimum of 50 feet, with the normal touchdown point being 1,000 to 1,500 feet down the runway, will help decrease the glide slope. Something else to consider is that the two approaches mentioned do not have approach lighting. With approach lighting, the runway environment may be seen early enough to avoid a steep approach.)* Minimums of 600 and 2 or 300 and 1 would be realistic. For additional information, the approach chart should be marked with height and various DME mileages from the end of the runway and should include a rate of descent that makes good the straight-line descent for specified ground speeds.

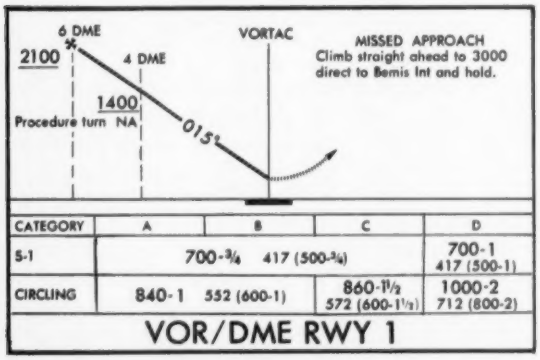


Figure 6. Approach minimums for Albany

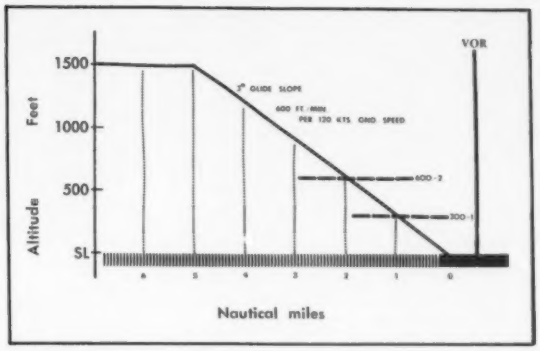


Figure 7. Profile of Optimum Computed Nonprecision Landing Approach

Airborne computers, such as those that generate glide paths from estimated ground speed or DME distance, are very valuable in making these approaches. Without a cockpit computer, we could compare our initial rates of descent to the table values in the letdown books and compare actual altitude along the flight path with the printed values on the proposed charts. When we reached the MDA and did not have the runway environment in sight, we would immediately start our go-around. We also would know that as long as we followed the rate of descent indicated we would be "in the slot" for landing at any time and need not be concerned with abrupt trim and power changes required in the "chop and drop" procedures. More importantly, we would know how to avoid the "plop" by starting our missed approach procedure immediately upon reaching MDA if the runway was not visible.

In Summary

We agree with the Flight Safety Foundation that there should be an instrument landing system for every runway used by jets. However, we and they realize that it will be years before reasonably full coverage of jet-use runways will be achieved, and we'll always be operating from foreign fields without precision aids. A much faster and simpler solution would be to equip each facility with a DME so that continuous fix information is available. In addition, each runway should be equipped with a visual approach slope indicator (VASI) for guidance after the runway environment becomes visible. Until then, our best bet is to know and understand nonprecision approaches and strive for optimum crew coordination.

(Adopted from Flight Safety Foundation)

From the April AIRMAN, we offer the true story of . . .

my friend

April was the month he expected to kick his habit. If he didn't, he realizes his days are numbered.

MY FRIEND, AN AIR FORCE officer, pilot and family man, is an addict.

He works in an office, often briefs general officers and senior civilians. But his addiction isn't apparent. If it were, he could never continue building the successful Air Force career which has brought him from airman to field grade. When he first joined the Air Force, he was a high school graduate. Now he has a master's degree, was a distinguished graduate from a senior service school, and has been awarded numerous other high Air Force honors along the way.

Yet, he has been addicted all along.

When denied a "fix," he, like any addict, experiences a terribly agonizing ordeal which not only warps his values, judgment, and performance but his life as a whole. Specifically, my friend becomes irritable, then nervous; begins to perspire,and soon begins to act irrationally. But what is worse, unless he kicks the habit, he does not expect to live to see his kids graduate from high school!

My friend, you see, smokes four packages of cigarettes each day! This is not simply a habit. He is firmly *addicted to tobacco or nicotine.*

"I never smoked a cigarette," he says, "until I was 21. It all began, in fact, while I was in flight training. Back in the early '50s they deferred to smokers.

"Anyway, classes were broken by 5-minute smoke breaks. The smokers went outside, while the nonsmokers were asked to remain at their desks. Well, it didn't take too long for me to start going outside to smoke with the group. The first cigarette I smoked, I inhaled completely, and I've been smoking about four packs a day since."

Now, he awakens at 5:30 a.m. each day, his body already in a highly nervous state, craving a cigarette. He smokes one or two, then shaves and showers, and lights another cigarette while waiting for the coffee to perk. The coffee and cigarettes plus a generous breakfast provide ample nourishment for his 5'-10", 140-pound frame. Unfortunately, he has long since lost his sense of taste, except for anything but strong cigarettes and the spiciest of foods. "If I can taste the food, it's probably too hot for my stomach."

He leaves home early, earlier than most, so he can arrive at the office and smoke in peace while reading the morning paper. He almost finishes his first pack before finishing the paper.

These cigarettes are completely smoked. In no way do they resemble the long, crumpled, half-smoked cigarettes common of chain-smokers.

The routine and tensions of compressed suspenses, classes, briefings, preflight planning and what have you, are broken by the greater portion of another pack before noon.

I joined my friend recently for lunch and while we talked and ate, he smoked the remainder of the second package and opened a third. Also, he reminded me that he'd have to buy "two more packages before returning to the office."

The cost of the cigarettes — some $1.50-1.75 daily — is not a major factor financially; the $40-50 a month isn't needed for his children's education.

The afternoon sees the third package finished and the fourth opened. At home, his children, openly, sometimes violently, voice their disapproval about their father's habit. They also complain about their father's habit each time they go for a ride in the family car. "I tell them," he says candidly, "you'll have to put up with the smoke or walk." My friend's smoking continues, unabated, and he usually finishes the fourth package just before he drops off to sleep. He has lit, smoked, and crumpled a butt every 12 minutes — 80 "fixes" a day.

"There's not a carpet in the house, he says, "that isn't burned. Of course, that goes for the upholstery, my clothes and the seat covers." But even these do not reveal the extent of his addiction.

My friend lit another cigarette and continued, "Let me tell you about the time I went squirrel hunting back home. I got up around 4 a.m. and drove into the mountains near where I planned to hunt. After parking the car, I carefully placed my cigarettes — four packs — and matches in an inside pocket. Now,

the addict

I had to walk quite a distance to reach the place where I would hunt and while on my way decided not to have a cigarette. The squirrels just might smell the smoke. Finally, I gave in.

"The head of the match just sorta crumbled when I tried to strike it. I tried several more before realizing that they were damp from perspiration. No real worry, I thought, because I had a full package of matches. But after a while, most of them had crumbled away.

"That's when I got a little panicky. I'd pull off a match and wave it around in the air and blow on it, trying to dry it out, but no luck. Each time I tried to strike the match, the head crumbled.

"To make a long story short, I was soon out of matches. I scurried around the hills looking for a piece of flint, but without success. I even broke open a shotgun shell and tried to light the powder by banging it with a rock.

"Then I got an idea. You know how a long flame shoots out the end of a gun barrel, especially a shotgun, when it's fired? Well, I squirmed around there, trying to get the shotgun in position alongside my face so I could puff on the cigarette when I pulled the trigger. I was having a helluva time when I finally realized that if there was the slightest slip or miscalculation, I'd blow my fool brains out.

"That scared me. So I unloaded the shotgun and headed back for the car. My problems were not solved when I got there. You see, the car didn't have a cigarette lighter and I simply couldn't wait until I got back into town. I juryrigged a short between the battery cables with a knife, screwdriver and something else, and lit a cigarette that way. I also kept one lit going home."

He finished the story, lit another cigarette and volunteered the following point. "Know what? Smoking is the only thing that I deceive my wife about; the only thing I've lied about to her.

"Once I told her that I had actually quit smoking. But even then I slipped into the bathroom at home to smoke. I'd have to stay in there for an hour while the smoke cleared. My wife could see the smoke drifting out at the bottom of the door, and she laughs about it now. She finally caught me with a cigarette, but I lied about it to her face. I insisted that not only was I not smoking but didn't have a cigarette in my hand.

"Now let me tell you what my children say. They look at me in a solemn manner and say, 'Too bad, dad, you won't be around when we finish high school.' "

High school for my friend's children is only a few years away. I asked him if what they say bothered him and he replied, "Oh, hell, yes!"

He went on and on, finally offering an example which sums up his degree of addiction. Like most crewmembers, he attended survival training. In this training the crewmember is subjected to an extended stay in simulated captivity — known as the compound. My friend had no trouble in smuggling enough cigarettes into the compound to last throughout the ordeal. He did this by staying up the better part of the night while carefully placing scores of cigarettes in his clothing. They escaped detection and he smoked away while locked up. In fact, he went so far as to smoke a cigarette while locked in the small, 2-foot-square, solitary box with a laundry bag over his head.

He tried to quit smoking a few years ago, but soon found himself smoking over a package a day while in hiding. "In fact," he said, "I once even got through 4 hours without a cigarette."

In all fairness, he has made some progress. About a year ago his wife pressured him into switching to filters.

What does the future hold for him? He honestly expects to die from lung cancer, or perhaps lip, tongue, or throat cancer within this decade if he keeps up at his present rate. Consequently, he insisted that he would quit smoking promptly on April 13, 1972.

What is the significance of April 13, 1972? "Nothing," he says. "I've got to pick a date out of the air, a date that's somewhere in the immediate future. That way, I'll have time to build up a psychological as well as physiological defense to my addiction. I simply plan to quit smoking on April 13, 1972."

—Maj Jimmy W. Kilbourne

(Editor's note: How did he do? To use a newsman's term, "Pentagon sources" indicated "half a victory." Apparently the friend dropped to two packs a day. Does anyone think he'll make it now?)

One Landing

by Capt Dennis W. Stiles
67 ARRSq

AT 0420, TEN MINUTES BEFORE the alarm, Lt Kemp was awake. He woke instantly and totally, and his mind snapped to the same cold place it had been when he had finally fallen asleep. Without intending to, he silently recited one of his bold-face emergencies and all of the limiting turbine inlet temperatures. He recited the same emergency procedure again, then realized what he was doing and rolled over to bury his face in the pillow. He knew it was foolish to be nervous.

At 0425 he reached out and snapped off the alarm to keep it from waking his wife. He was surprised that only five minutes had passed. He closed his eyes and thought for a moment about going back to sleep, knowing that he had studied enough already, but gave up the idea when the same emergency procedure reappeared on its yellow page edged in black. He eased gently out of bed and went through the familiar ritual in the bathroom, careful not to shave himself in exactly the same way as he had the day before. Lt Kemp was a careful person, blessed and cursed by imagination and a sensitive conscience.

He made himself a big cup of hot chocolate, avoiding the effects of coffee, and turned on the radio just

Third Place Winner 1972 Writing Contest

before 0500 to catch the news and weather. He knew that a front was due to pass sometime during the morning or early afternoon, and he was worried about the winds. He hadn't had much work on crosswind landings. The radio weatherman forecast brisk winds out of the southeast and a generally blustery day. Not very specific. Lt Kemp went to the phone and dialed for the recorded weather. As of 0400, the Weather Bureau had forecast winds varying from 150 to 180 degrees at 15 knots. He wondered if civilian winds were magnetic or true; deciding to take the worst possible case, he plotted the values in his performance charts. The worst wind would give him a left crosswind component of 12 knots. It didn't sound too bad, but he had never landed in a wind quite that stiff. He hated to try it the first time on a check ride. For a few seconds he imagined approaching the runway in a crab, going visual, dropping his left wing and putting in right rudder. Then, as he tried to put wind and drift out of his mind, he skimmed through a pile of manuals, checking off his list the most important chapters one by one. At 0600 he turned on the small kitchen television and waited through the same news he had already heard for the Today Show's weather.

* * *

At 0420 Capt Tanbeck was asleep and not dreaming. At 0630 he was still asleep. And at 0700, fifteen minutes after the alarm had gone off, he was asleep again. He didn't know what he was scheduled to do that day, but he had every confidence that he would do it well. With only three years in the airplane, he was the youngest flight examiner in the squadron. The old-head engineers complimented his landings and the new, young pilots laughed at his war stories. The commander sometimes asked his opinion about operational problems. He liked his work and thought it was easy. The struggles were part of a distant past.

* * *

By 1130 Capt Tanbeck and Lt Kemp had been in the GCA pattern for almost an hour, shooting low approaches. Their airplane was still too heavy for touch-and-go landings. The weather was sloppy, with light turbulence in the clouds at pattern altitude and a ragged ceiling at 500 feet. Intermittent showers had left the runway wet.

Lt Kemp was flying well and had been sharp during the preflight quizzing. Both he and the captain were pleased. He was trying to concentrate on one thing at a time, though the problem of the winds and the first landing still nagged him. Tower was reporting a 50-degree crosswind with gusts to 20 knots.

* * *

Capt Tanbeck was bored with the routine repetition of radio calls to the controller and wondered what he could do to break the monotony of the ride. He wished it wasn't quite so bumpy. No emergency procedures on an IFR day. The ILS was out. He glanced at the fuel gages. Another hour before a touch-and-go would be legal, but as long as touchdown was smooth it wouldn't matter. Lt Kemp was gentle with the airplane and the comments in his training folder were extremely favorable. Capt Tanbeck took the plane on downwind, and after a smooth approach he touched down with a barely noticeable bump, on speed and in the center of the runway at the 1,000-foot marker, working the yoke hard to handle the shifting, gusty winds. Capt Tanbeck smiled to himself and on climbout gave the airplane to the lieutenant. "Now you try one." He leaned back and relaxed.

* * *

Lt Kemp took the airplane and immediately felt tense. He made his approach briefing as bland as possible, almost indifferent, to compensate. "Okay," he said, "procedures remain the same. I'll call for 100 percent flaps when we break out. Give me the standard calls and watch my airspeeds. Recheck gear on final, and let's get the Touch-and-Go Landing now." In his mind he was dropping left wing and adding right rudder, dropping left wing and adding right rudder.

On final approach he was carrying the same 10-degree right drift he had noted on previous approaches. He tried to keep his airspeed a little high, but the turbulence made it hard to control precisely.

As soon as Capt Tanbeck called runway in sight, he looked up and called for full flaps. He was surprised, as he always was, at how close the runway seemed at a mile. It seemed closer now than it had on

One Landing. . . .

his low approaches. He was to the left of extended centerline, which meant that he had to angle in to the right and take out crab at the same time. He was trimming hard to compensate for the flap change and trying to catch his new recommended airspeed. Too much was happening at once, and he wasn't sure just how his picture should look. He got the wing down and pushed rudder, but with the angle to centerline he couldn't tell if he was compensating correctly or not. Everything was moving fast. He wished he could go back and start over.

The aircraft came over the threshold still to the left of centerline, in a slight left crab, drifting right. Lt Kemp felt a slight surge of panic as his rudder control got sloppier at reduced airspeed. Something looked wrong and he wasn't sure how to correct it.

* * *

To Capt Tanbeck the approach looked good. The lieutenant was holding the bird on speed, had most of the crab out, and seemed to be drifting just enough to reach centerline before touchdown. For a second he wasn't sure and started to reach for the controls. Then he held off and called over hot mic, "You've got it made. Just kill your drift now."

* * *

When Lt Kemp heard the call to kill drift, he hesitated an instant and then pushed left rudder, the wrong thing to do. The aircraft touched down in a right drift with increasing crab into the wind. It dropped hard, *bang!* Then there was a second bang as the right front main tire blew.

Capt Tanbeck grabbed the controls as the plane started a gentle skid. He maintained partial control with asymetrical power as he directed the lieutenant to get on nose-wheel steering, thought for a bad few seconds that he was going off the runway, then straightened up and gradually slowed to a stop. The noise in the wheel well as the tire deteriorated and flew apart was tremendous, and even with the engines running he felt as if he had dropped into a hole when the motion stopped. His head was buzzing. He shook it, swore briefly, and asked for the shutdown checklist.

Lt Kemp felt terrible, numb. He said, "I'm sorry," and no one seemed to pay any attention. The skin on his neck was tingling and he could hardly read the checklist. The landing seemed unreal, and he kept taking himself back to final approach, making it not happen.

* * *

Col Quigler was working on a message requesting emergency TDY funds when the phone rang, and the tower operator told him that one of his aircraft had just blown a tire on touchdown. He asked about other damage or crew injuries, confirmed the call sign, thanked the caller, hung up, and swung his chair around.

Through the rain-spattered window he could see a tug backing up to the tow bar attached to the nose wheel assembly while the crew, standing alongside, watched. He tried to remember who was on the local schedule and couldn't. He buzzed the operations section on intercom and asked if they were aware of the incident. Then he asked to see the pilots as soon as they came in and went back to his message.

* * *

At 1240 Lt Kemp and Capt Tanbeck were sitting across from Col Quigler looking appropriately dismal and feeling very nervous.

"Well," he said, "what happened?"

At first neither one answered, then they both answered at once in almost the same words, "It was my fault, sir." They looked at each other, almost for the first time since the landing, and the lieutenant blurted, "I didn't have good control of the aircraft in the crosswind. I touched down hard in a crab. I thought about going around, but it was a check ride. I was afraid to go around and afraid to touch down. At the end I just hung on. I guess I really blew it." He looked at the floor and felt as if every friend he had in the world had just left him and slammed the door.

Capt Tanbeck sucked in a deep breath and said, "I should have taken the airplane on short final, sir. It's my fault. I made a mistake in judgment. The airplane was drifting right, and I assumed that Lieutenant Kemp was correcting to centerline. From where I sat it looked like a beautiful approach up to that last couple of feet above touchdown. Then he put in rudder instead of wing, and

I was too late to catch it before we hit." He hesitated. "I'd like to add, sir, that we were over the max authorized weight for touch-and-go landings when this happened and that I authorized the landing."

The colonel puffed out his cheeks and blew slowly. He leaned back and looked at the ceiling, then leaned ahead and tapped a pencil on his thumbnail, trying to find exactly the right thing to say. "This squadron," he started, "has over 11,000 hours of mixed, hard flying — a lot of training, with pattern work and maneuvering at low airspeeds and altitudes, and a history of tough operational missions — with no accidents. Yours isn't the first close call I've seen and won't be the last. I don't know how the crews do it. Sometimes it seems half magic."

He paused for a few seconds, remembering some scares of his own, and added to Capt Tanbeck, "You did a good job with the airplane on the runway. At least you kept it there. Your judgment in allowing the landing in the first place and your supervision of it are another matter, but I'll talk to you alone about that another time." He sensed that he was rambling and should come to the point.

"Here's what I want you to learn from this incident," he said. "There's a kind of low-intensity courage that every man who ever accepts responsibility for an aircraft and its crew needs to develop — an honesty so clean and total that you're never afraid to lay your weaknesses on the table. Be proud of your flying but don't defend yourself with pride. Be proud after the fact and humble before. Am I making sense at all?"

He waited for their nods and then went on, "I used the word courage, and that may sound strong, but I don't think so. Courage in a crisis is easy. The adrenalin spurts. You can see that something has to be done, and no one will disagree with you. Courage short of a crisis is one of the hardest things in the world to generate, because the easy thing — the ego-saving thing — is to wait, to assume that the problem will solve itself. It may not. I think that you saw that this afternoon, both of you.

"Now, I want you to do this for me. As long as you're in this squadron — as long as you're in this Air Force, for that matter; and you both have long careers left, however doubtful you're feeling this minute — whenever you feel that first tickle of doubt about your situation in an airplane, take a deep breath and do the safest thing you can think of. If you're wondering whether or not you should wake up a sleeping crewmember to help you scan outside, wake him up. If you're short on fuel and wonder if you should try one more approach before you start for the alternate, start for the alternate. If you're not *sure* you can make a safe, precisely controlled landing, go around. If you're tempted to cheat just a little on your aircraft limits, don't. Whatever that costs you will be cheap. That's all I have for now. I'll let you know what maintenance finds."

* * *

The commander shook his head after the two young officers saluted and left. He knew how they felt.

He finished his message on funds, checked the calendar for the times of three meetings he still had to attend that afternoon, and then started to study the record of a young airman who was periodically threatening suicide. Before he left the office, he learned that at least initially there didn't seem to be any damage to the aircraft except for the blown tire.

Three days later Col Quigler had nearly forgotten about it.

* * *

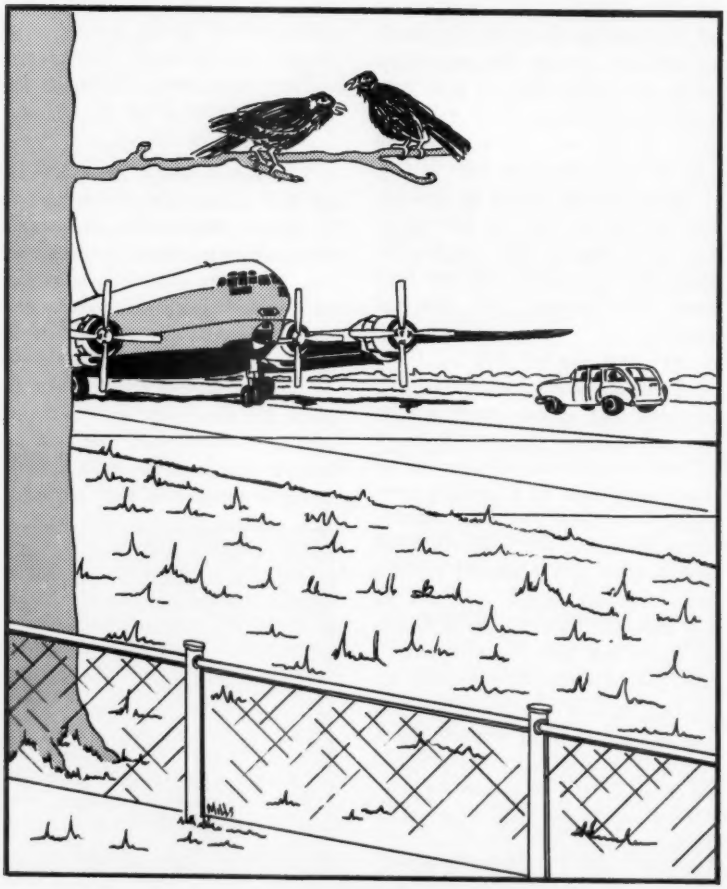
Lt Kemp and Capt Tanbeck avoided their friends for a week, and for a month they were embarrassed every time they heard a safety briefing. Then they started to relax. They forgot the incident for days at a time and eventually filed it on top of the other war stories. By the end of the year no one mentioned it any more. Yet, they knew, each to himself and in his own way, that that one landing had been the most valuable flying experience in their careers.

ABOUT THE AUTHOR

Capt Stiles graduated from the USAF Academy in 1964 and went directly to graduate school at Georgetown University. After pilot training in the now rescinded T-28/helicopter program, he served a tour with the Jolly Greens at Udorn AB, Thailand, and after a short stint in Hueys in South Vietnam, returned to the 1042nd Test Sq (HQ COMD USAF) at Dover AFB in the H-3 helicopter. He is now flying HC-130s with the 67th ARRSq at RAF Woodbridge, England.

Truth is occasionally stranger. We present this account based on an actual incident of . . .

The Ravens



The goal of safety journalists over the years has been to produce materials which would reach the average reader. Although our products have run the gamut of complexity from "Run, Jane, run" to philosophical discourses on psychosomatic aberrations, the average level has been on a par with Reader's Digest. And this level is as it should be, but every so often we get some feedback from readers indicating they would like to see more novel or more subtle material. Therefore, from time to time we will publish a feature with a muted, non-blatant safety theme, aimed at satisfying the needs of the erudite minority. This is one of those features.

* * *

TWO RAVENS SAT in a small tree just inside the perimeter fence. Heads cocked to one side, beaks sagging slightly open, they watched a blue station wagon pull up near a transport aircraft parked on the ramp. Several men in green stepped out, unloaded a few bags, and began to move around the aircraft.

The younger raven, still showing a few small traces of down, turned to look at his obviously elder companion. He waited a moment then spoke in the raspy tones of his breed. "What are they doing, sir?"

The elder, without interrupting his scrutiny of the activity, answered: "Preflighting." His tone implied a contemptuous familiarity with the subject, and the youth, in his eagerness to know more, continued: "What's that mean, sir?"

"It means that they are attempting to establish by visual means the airworthiness of this particular machine."

The youth said, "Oh," and turned again toward the ramp, his silence indicating satisfaction with the answer. As he watched, one man opened

a large book and began to leaf through it. Again the youth broke the silence with a question: "What's he doing, sir? Is he going to read them a story?"

"He's checking the aircraft forms," answered the elder. Then, abruptly raising a forestalling wing, he said, "And before you ask, that is because he wants to know what has been done to the aircraft since it was last flown."

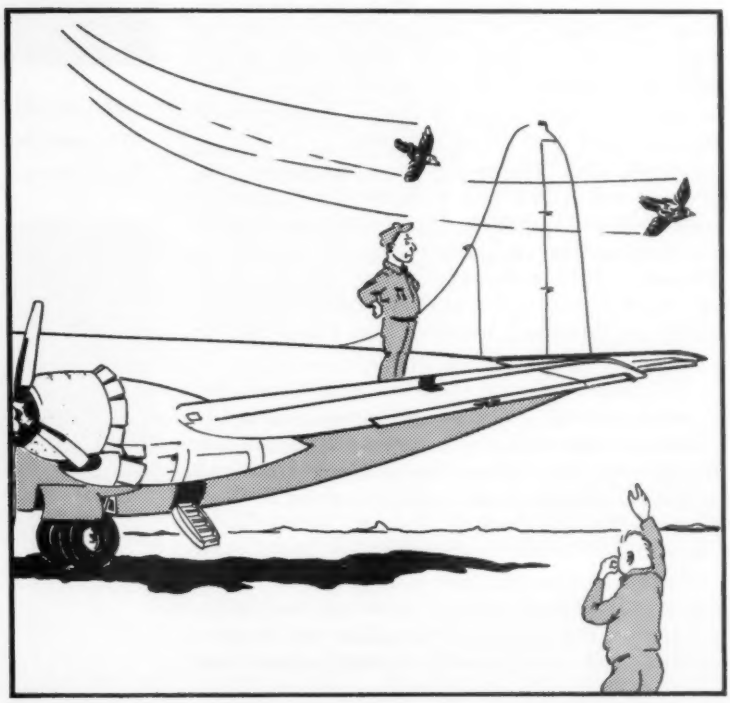
"Oh."

Soon another man took the book and climbed into the aircraft. Two others, carrying small binders and peering carefully at all parts of the machine, began to move around the plane in a clockwise direction.

The elder raven, speaking in carefully modulated tones containing touches of patience and pompous tolerance, answered the youth's questions about *why* they looked at propellers, *why* they looked at the wheels, *why* they looked at the control surfaces. His discourse continued as the men moved along the fuselage, around the tail, and forward to the left wing. The youth, nodding sagely at each bit of wisdom, kept his beady black eyes trained on the scene.

Near the left wingtip the men halted. The ravens noticed that they seemed concerned about something, for there was much pointing and talking and shielding of eyes against the sun. The excitement of the men was contagious, and the youth began to fidget.

"Why are they so excited, sir?" he queried the elder, cocking his head first one way and then the other. For once no answer was given. Instead the elder lunged forward, gave a mighty flap of his gleaming black wings, and began to fly toward a bird's eye position above the transport. The youth was taken by surprise, but he too leaped from his perch in the tree and soon joined the bigger bird in loose formation. Together they leveled well above the tail, and started a lazy left-hand orbit.



Below them, they could see one man walking out on the wing and stopping near the tip. The youth, somewhat out of breath after his maximum effort takeoff, blurted "Whatsgoingonsir?"

The elder still remained silent. Instead he tilted the feathers on the trailing edges of his wings, increased his bank, and began a rapid spiral descent. The youth moved into a tighter formation, and the two flashed quietly past the startled crewmen, then flapped back to their roost in the tree.

After a moment spent adjusting his plumage, the elder spoke in a most puzzled voice. "It seems that there are several small holes in the aileron. Something has been punched through the fabric — or *something has taken bites out of it.* They have good reason for their concern."

The youth appeared almost pale (black, of course) as he nodded in thoughtful agreement. In a greatly subdued voice he said, "It tasted horrible, sir."

The elder, with a look of shock and surprise, turned toward the younger bird and noted for the first time three threads and a fleck of silver paint stuck on the youth's beak. Then he pulled himself erect and gave the lesser raven a smashing blow with one powerful wing. "Dummy!" he rasped.

The youth plummeted to the ground, picked himself up and gingerly rolled his head from side to side. Slowly he moved to a position near the bottom of the tree. Quote the (younger) raven, "Nevermore."

(Moral for the majority: Checklists and sharp eyes a good preflight make.)

An Exceptional Unit: Charleston's 76th MASq

by 1st Lt Don Schaefer
437 MAWg/OI

KELLY AFB, TEXAS, July 20, 1952 — The 76th Air Transport Squadron, Medium, was activated here today adding another unit to the Military Air Transport Service (MATS). The unit will use the Douglas C-54 Skymaster to accomplish its mission of transporting personnel and cargo for Department of Defense."

This brief item might have appeared twenty years ago in the local San Antonio newspapers and a few MATS base papers. As so often happens, the unit was activated with little fanfare.

Twenty years later another item appeared in the local Charleston, SC, newspapers: "Charleston AFB, SC — July 20, 1972 — Today marks a milestone in aviation history as the 76th Military Airlift Squadron celebrates its 20th anniversary of accident-free flying. The squadron, which has accumulated 555,000 flying hours, is one of three assigned to the 437th Military Airlift Wing stationed at Charleston AFB."

This latest event was altogether different from the activation of the unit. Old commanders and flying buddies met, ceremonies were held, displays were set up, friends and families toured the 76th facilities, and there was a feature story in the Charleston AFB newspaper, the *Airlift Dispatch*.

The men and women of the 76th have reason to celebrate: Two decades of continuous service in the Air Force, over 555,000 flying hours, without being charged with either a minor or major aircraft accident. That's an enviable record, to say the least — a record to be imitated by all other flying squadrons.

Actually, the 76th's history dates back further than 20 years ago. It goes back to World War II days but statistics are not available to determine if its short period of operation then was accident free too. Activated on February 8, 1943, as the 76th Ferrying Squadron,it was an integral part of the Second Operational Training Unit (OTU) at Homestead Army Air Base, FL, in the Air Transport Command (ATC).

ATC formed four such OTUs during 1942 and 1943 to offset a critical shortage of pilots and crews and to provide a continuing source of adequately trained men for its cargo and ferrying operations. Students were assigned to an OTU for four weeks of training by Headquarters, Domestic Transport Division, the unit having control of ATC's training program.

The first candidates began to arrive at the 76th's training classrooms shortly after its activation. The training program got into full swing as the pilots, copilots, radio operators, and aerial engineers attended ground school

For 20 years, the men and
76th Military Airlift Squad
without an accident. Ove
hours have been logged —
hours per day for 7300 da

TWO WORKHORSES, the C-1
121, accounted for a large s
flying hours.

men and women of the
lift Squadron have flown
lent. Over 555,000 safe
logged — that's 76 flying
r 7300 days.

ES, the C-141 and the C-
r a large share of the safe

in such areas as meterology and navigation. Later they moved into flight training. After completion of the curriculum, the crews were qualified for foreign transport service.

In June 1943, its name was changed to the 76th Transport Transition Squadron, but its mission remained essentially the same.

When the Army Air Force reorganized its training program in early 1944, the 76th TTS found itself without a job and on March 31, 1944, it was disbanded. But before its deactivation, the men of the 76th gained flying experience in a wide assortment of World War II aircraft: the Lockheed C-36, the Douglas C-49 Skytrooper, the Cessna C-78, the Lockheed C-60, the C-57, the AT-6, the AT-17, the UC-78, the C-39, and the Curtiss-Wright C-46 Commando.

Between 1944 and 1952 several important events took place. On September 17, 1947, just 25 years ago, the USAF was made a separate branch of the Department of Defense by President Harry S. Truman. Nine months later the Military Air Transport Service (MATS) came into being. And in 1950, the Korean war began.

Because of the needs of MATS during the Korean conflict, it was necessary to reactivate the 76th at Kelly AFB.

So, eight years after its deactivation in World War II, on July 20, 1952, the 76th Air Transport Squadron, Medium, was reconstituted and activated for service. Crews flew the Douglas C-54 Skymaster as part of the 1700th Air Transport Group, MATS, on both scheduled and non-scheduled transport flights. The unit carried cargo and passengers into Japan, Europe, North Africa, and the Caribbean area as well as within the Continental United States.

Another change took place on Feb 1, 1956, when the 76th moved to Charleston, SC, shortly after the air base had reopened. Converting to the C-121 Constellation, the crews of the 76th flew mainly to Europe as part of the 1608th Air Transport Group, MATS, Atlantic Division — now the 437th Military Airlift Wing of the 21st Air Force.

As the accident-free flying hours mounted up, the unit expanded and in 1963 began conversion into the multi-engined Lockheed C-130E Hercules.

The unit's mission as it is today began to take shape as MATS was renamed Military Airlift Command (MAC) on January 1, 1966, and took its position as a combat force along with SAC, TAC, and other major commands. Again all the unit signs, posters, emblems, and decals were changed to the name it holds today, the 76th Military Airlift Squadron.

BYGONE BIRDS: North American AT-6 Texan, Cessna C-78 Bobcat, Douglas C-54 Skymaster, Douglas C-39, Lockheed C-130 Hercules.

MANY FACES from 76th's album: C-141s line up for airlift competition; Hungarian refugees arrive in the U.S.; a GI deplanes; and soldiers board for a deployment.

The change from the C-54 to the C-121 was not too drastic, nor was the transition from the C-121 into the C-130. The 390,000 plus hours of accident-free flying during the first 13½ years of existence looked pretty good. It exemplified the outstanding ability and careful teamwork of these pilots and crewmembers. The prop aircraft were reliable but now a new type of transport entered the MAC inventory, a faster one: the four-engine C-141 Starlifter.

It was time to convert. Would a jet transport be as safe? Yes! was the resounding answer, and that answer has been proved. The flight crews of the 76th have chalked up more than 165,000 accident-free flying hours in the C-141.

The transition to the Starlifter began in 1967 and by April of 1968 the 76th was fully operational. Crews from the squadrons were providing rapid, responsive airlift to any place in the world faster than before.

As the months rolled by, the 76th showed its mettle again and the safety record continued. Activity in Southeast Asia added thousands of hours to the planes and the crews. Humanitarian airlifts into Peru, Chile, Pakistan, India, and many other areas added more hours. So did support of the Eastern Test Range, Cape Kennedy, NASA, and the Apollo moon launches, and Presidential journeys throughout the world, notably to Peking and Moscow.

The 76th has been in the front row for the action — and the awards. Each time flying safety awards were presented, the 76th was near the head of the line, and each time the 437th Military Airlift Wing was presented the Air Force Outstanding Unit Award — five times in all — the 76th was cited for their activities and for the flying safety record.

Yes, the 76th Military Airlift Squadron has much to boast about.

Its 239 officers and 224 enlisted members, led by Lt Col Arthur F. Weickhardt who took command in mid-May, have reason to be proud. So do the 15 previous commanders in the 76th's 20-year continuous history. So do the men who served in the 76th during the past two decades.

Yes, July 20, 1972, was a memorable day. It was a day when the men and women of the 76th could feel special excitement in being associated with an elite corps of flyers. But most of all, it was a day that began another 20 years, another 555,000 hours of accident-free flying.

THE MAC FLYER proudly salutes the 76th Military Airlift Squadron as an exceptional unit.

The multi-man life raft — your key to survival on water or land.

Dinghy on the Ice Cap

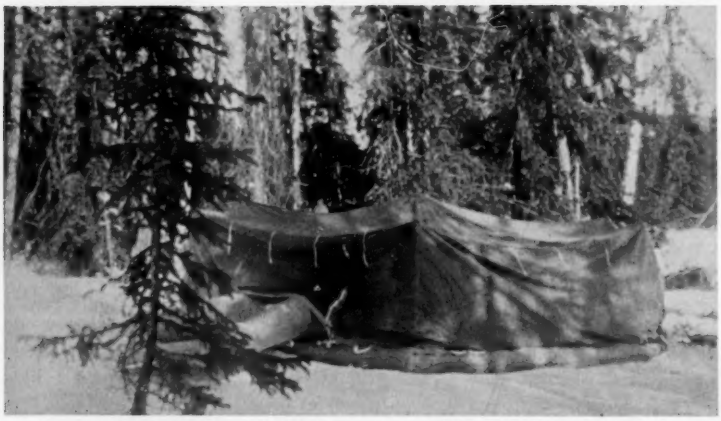
by Maj F. C. Westergaard

SOMETIMES our methodical military way of categorizing things and situations entraps us. For example, when planning for aircrew survival, we tend to think of a survival environment as being either land or water, and either arctic or desert or jungle. Most of us would probably classify a crash landing in Alaska as an *arctic* survival situation, though a similar experience in Maine in January would seem to fall in a different category. We do this even though 20 degrees below zero near Bangor is just as cold as 20 below zero near Juneau.

More often than not a survival experience involves a *combination* of environmental factors. For this reason the design of a good survival kit must consider all survival environments, and, because of bulk and weight considerations, become a good compromise. Your MAC multi-man life raft is such a survival kit. It offers a means of survival in *any* environment—*provided you are flying with the proper clothing.*

A Good Survival Kit

The multi-man life raft with its accessories is a good multi-environment survival kit for a simple reason: many pieces of gear necessary for water survival can be put to good use on land. The bailing bucket you use to get rid of water from your raft in the ocean can be used to bring water from a stream to a land camp site. The kit you use to distill salt water will also make polluted water drinkable. All of the signaling devices — radio, mirror, pyrotechnics, and even sea marker dye — have utility in *any* survival situation. The same raft cover you use to keep the ocean out can be used to keep fresh rain water in. In other words, the



Need a COZY HOME? Start by pulling the lanyard.

uses for the multi-man life raft and its components are as great as the resourcefulness of the survivors using it.

Advantages on Land

The greatest advantage of the multi-man raft is that it becomes an "instant" shelter with the simple pull of a lanyard. The canopy can be erected quickly to provide protection from sun, rain, or frigid winds. The waterproof floor and its inflatable support chamber keep survivors off the ground — high and dry. And of course, the basic protection provided by the raft can be improved by adding insulation such as leaves, dead grass, aircraft insulation, or even snow.

Experience has shown that the multi-man life raft is surprisingly rugged — it's not as easily punctured as one might think. Even if you do make a boo-boo and spring a leak, the raft can be fixed with repair plugs from the accessory kit.

Being located depends on being seen, and the orange colored raft with the fuchsia side of the canopy turned skyward is more easily seen from the air than shelters made from natural materials. Put the new SDU-30E high intensity strobe light (soon to be in the MAC inventory) on the canopy mast and your location can be spotted from many miles away. In fact, by using the strobe light, the radio, and some improvising, you could conceivably effect your own rescue without leaving your "rubber Hilton."

A final advantage— and an important one — is that there are several rafts on most MAC multi-engine aircraft. Each C-141 offers four to seven 20-man life rafts, and there are four 25-man life rafts on every C-5. That's a lot of survival kits. For a basic crew, there could be enough rafts to build a palace.

Some Disadvantages

I would be less than honest if I didn't point out some important disadvantages. For example, fire, sparks, molten aluminum, or excessive heat will render a raft useless very quickly. If your crash landing is followed by a fire, you'll have to hustle.

Another thing to consider is that

"There wasn't any need for survival gear."

by 1st Lt Keith Bittle

HERE IS A TRANSCRIPT of a message written on the backs of some papers found at a crash site. The helicopter had gone undiscovered for 8 months.

* * *

"We've been down for 2 days now. I didn't begin to doubt we'd be found until just now when the major died. I'm writing this to explain what happened, in case we don't make it. My copilot is still unconscious and the colonel and major are dead. I haven't seen the crew chief but he's probably somewhere near the point of impact.

"If it had been just one thing going wrong, we probably wouldn't be here. But problems always seem to come in bunches. Our problems started with a rush call

a raft deployed from a C-141 wing fillet comes out *inflated!* This might or might not pose a problem. Rafts installed in C-141 silos represent no unusual problems other than removing them from their retaining devices and carrying them out an emergency exit. Again, you'll have to work fast but carefully.

In the C-5, the raft deployment lanyard is secured to the aircraft. If you throw the raft from a C-5, it too will come down inflated. To prevent this, simply disconnect or cut the lanyard as close to the aircraft connection as possible.

By the way, those bigger rafts with all their gear will weigh over 150 pounds. Better plan on a two-man effort to move them.

An Arctic Test

Students attending Arctic Survival School at Eielson AFB, Alaska, are sometimes permitted to bring with them certain survival items unique to their missions, to use during training. MSgt James F. Burton, NCOIC of Life Support/Survival Training for the 60 Military Airlift Wing, surprised the school staff by reporting for training with a 20-man life raft. His instructors were even more surprised at the *results* of his informal test. Here, in Sergeant Burton's own words, is his report on his test:

"I pulled my raft about 50 yards from a hard packed snow surface to simulate moving a safe distance away from the aircraft. The snow was 36 inches deep — difficult to move through — and the temperature was about twelve below zero.

"In a fairly flat area which was clear of obstructions, I inflated the raft. After the raft was fully inflated, I closed off the equalization tube with the clamp. I found that extreme cold makes the equalization tube rigid and hard to close off. To make sure it was closed off, I used both C clamps (one on the top and one on the bottom side of the raft).

"After I was sure the equalization tube was clamped off, I let the air out of the lower raft cell until the floor touched the snow. If the lower cell had been left fully inflated, the weight of 20 people might have torn the floor from the sides of the raft. (If I had to do it over again, I would have put spruce boughs *under* the floor for additional insulation and support.) I used the hand pump

DEFLATE THE LOWER CELL to avoid tearing the floor from the sides.

to take the colonel to a training site at an alternate area. When we came in the night before, we were told we were off until afternoon and weren't expecting the early call. When we got to the aircraft, the crew chief was removing the covers and tiedowns and stowing them in the avionics compartment. The colonel and the major were already aboard and in a hurry. We abbreviated the preflight. We pulled pitch at 0955 for the flight over the large forest that ended here.

"I had flown the colonel before. He was not rated and didn't like aviators. He called us 'hot-rocks' and 'taxi drivers.' And he was usually impatient about any time spent sitting on the ground. Rather than get into it with an O-6, I cut my procedures to the bone and got airborne.

"The latest weather I had, from our briefing the day before, called for VFR with a possibility of thunderstorms in the early afternoon. We didn't have VFR for long. Thunderstorms were building, but the visibility was reasonable, so I figured I could circumnavigate them and remain clear if I stayed low.

"The first indication of problems developing was the

to inflate the center floor support cell. This gave added support to the floor, which was lying on soft snow, and helped to support the canopy center pole. Then spruce boughs were placed about six inches deep on the floor of the raft. In an actual survival situation I would have used blankets, fabric, insulation, or anything else to help insulate that cold floor.

"Next, I erected the canopy, and closed the zipper door on the upper boarding station. I planned to use only the entrance over the lower boarding station for an exit.

"Entire construction of this shelter took only twenty minutes. I was ready then to go through the rest of the training provided by the school — but in my spare time I was planning to take some temperature readings to see just how efficient my new survival home was."

According to the temperature data provided by Sergeant Burton, the 20-man raft — plus a little improvising — makes an outstanding arctic shelter. On a day with hazy sun, he found that by exposing the dark side of the raft canopy to the sun he could raise the temperature inside his raft from minus two degrees to a plus 24 degrees Fahrenheit. One night he used two small candles to raise the inside temperature from six below to 24 degrees above. On another night his body heat alone raised the temperature 9 degrees. Additional people would have increased the temperature even more.

Conclusions

Highly reliable engines, better navigation, more positive air traffic control, and improved rescue capability have all greatly reduced the possibility of MAC crews, passengers, and patients ever having to endure a survival experience. But MAC has not forgotten that the possibility of ditching or crash landing still exists, and every aircraft carries some survival gear.

If you ever face such an emergency, your best survival kit is your multi-man raft. The life raft provides quick shelter and its components can lead to prompt rescue. It is surprisingly rugged, it's repairable, and its uses are limited only by your imagination. And several of these life rafts are carried on MAC multi-engine aircraft.

As always, survival depends on you. To survive today, know your equipment, wear proper flight clothing and — before you leave your ditched or crash-landed bird — take your raft with you. It's your key to survival on water *or* on land.

BOUGHS, BLANKETS, AND AIRCRAFT SEATS, along with other man-made or natural insulation materials, will add comfort and protection to your survival home.

ABOUT THE AUTHOR

Major Westergaard, MAC's first Command Life Support Officer, was reassigned to Vietnam as 7th Air Force life support officer in July this year. The experience he gained in MAC's diverse operations will serve him well as he works with tactical aircraft in the war zone, where life support systems are used every day.

loss of the navigation radios, but I blamed the low altitude and rain. About 45 minutes out and 20 miles south of our intended flight path we got into the edges of a really big thunderstorm. The turbulence was bad and visibility was worse, so we were slowed down when we hit a tree top. We got a severe vibration but stayed airborne for a couple of minutes until the visibility dropped to zero and we hit the ground.

"We must have hit along a firebreak or something and gone under the tree canopy. I've heard some airplanes, but we're probably hard to see.

"I'd signal if I had anything. There wasn't any need for survival gear on this flight, so we didn't bring anything. Anyway, who carries survival kits in the states?

"I can't move much and I'm getting thirsty. The rainwater has about dried up.

"I'll rest now and try to continue this later."

* * *

No additional entries were found.

(Courtesy of Army Aviation Digest)

C.R. TERROR

MAJOR TERROR?" asked the voice on the other end of the phone. "This is Colonel Ripsaw at operations. We've had an immediate mission laid on us by the White House. Please have your crew ready at the airplane in thirty minutes. You'll be taking a code one to La Guardia. Any questions?"

"No sir," puffed C. R., the SAM outfit's newest aircraft commander. It had taken many years for the Master Manipulator of Wires and Tires to break into the rank of the "real pros" but he had finally made it. The checkout and buddy rides behind him, it was now time for him to do his thing.

* * *

"At last I'm in an outfit where I'm my own boss — it's my airplane and I don't have to answer to any command post," he proudly mused as he pulled into the squadron parking lot. As he got out of his powder blue 427 Corvette he continued, "I would have been up here a lot sooner if there weren't so many homesteaders."

In short order, C. R. filed his flight plan, coordinated with his flight steward, checked with his flight engineer, and learned with pleasant surprise that Long Suffering Sam, copilot extraordinaire, had also been reassigned to the elite group. Together they walked out to the waiting JetStar, the Rotund One's head held higher than normal and his feet barely touching the ground. When they reached the VC-140, Sam started the walk around and C. R. patted the nose affectionately. As he started to ascend the stairs he noticed a few smudges of dirt on the steps and the wing leading edge. He glanced around; a loud whistle and a wave of his pudgy paw brought a band of maintenance trucks and people to life and headed them for the aircraft.

"Man, this is great. Really first class. No waiting around. People fix things the way *I* want them or — *zam* — I'll get them all fired, and they know it," the Fat One spoke to himself.

As the maintenance men got to him, C. R. pontificated, "How could you guys let this aerospace machine depart this place with you know who, looking like this?"

"Who's you know who, Major Ter-

ror?" spoke a grizzled old chief.

The Ace of Aerospace swung quickly to see who had challenged him.

"Wha'da ya mean? — the big man himself, that's who. We're flying *the* Code One."

Major Terror, I'm sorry to inform you, but you're not hauling *our* President. Your code one is the Chief of Glibysiona, President Olivia." C. R. turned a shade of pink and stammered, "Ah, ah, the president of Glibysiona, heh," and then ducked into the airplane to find the forms and make sure the booze locker was well stocked.

* * *

The ramp was silent as a large black limousine pulled up and the doors swung open. The pudgy hands of the Prince of Pilotage poised over the start-ignition switches. As the president boarded the shiny JetStar, C. R. gang-started all four engines while Sam tried valiantly to keep pace with the checklist. The door closed and C. R. released the brakes.

"Sam, get me taxi clearance and tell tower we'll be ready for takeoff as soon as we reach the active, and tell them I want an expedited climb to 270 with no delays at La Guardia."

"Roger, chief, ah, but do you want to turn around and head for runway 17? You're going to the wrong one," Sam tactfully replied.

* * *

The climb to altitude was quick and smooth as C. R. red-lined the sturdy little craft. Just as they leveled off the steward came forward and handed C. R. a note. It read, "Pilot: see if you can get me seven seats on a 747 flight out of Kennedy. If you can, I want to leave from there instead of La Guardia." The Aviator with Avoirdupois handed the note to Sam and muttered, "These blankety-blank VIPs. Wish they'd make up their minds before takeoff. Sam, get busy on single side band and see what you can do. Man, this is gonna spoil everything. I had planned on eating lunch with Brenda."

"Who's Brenda?" the flight engineer cut in.

C. R. began, "She's a secretary I met while I was up here going to the Flight Safety Inc ground school and simulator — long legs, red hair, big . . ."

"Hey boss," Sam pleaded, "stop the gaffing, if you would, please. It's kinda hard to listen to two radios and you too."

"Okay, Sammy m'boy, you work the reservations bit and I'll handle the center boys." No sooner had C. R. said this than the ATC controller called.

"SAM 490, Clearance."

"Go ahead, center," C. R. slurred.

"SAM 490 is cleared to Robbinsville, to La Guardia, flight plan route. Descend and maintain 240, over." C. R. read the clearance back and then informed the controller that they might have a change in flight plan.

"Ah, roger, understand, SAM 490, let us know your intentions as soon as possible to avoid any traffic delays." The Gross Gripper of Go Levers rogered the center information and then queried Sam.

"What's the latest on the Kennedy reservations, my good man?" Sam waved him quiet as he busily copied something down.

"Sir, we can only get five seats on a 747 leaving in 20 minutes," Sam reported. The Nimble Numbnoggin quickly passed the message to the president and waited for an answer. A minute passed; then the steward came forward and told C. R. that the DV wanted C. R. to check with Balitmore's Friendship Airport to see what was available. At the same time center asked for their intentions.

Our Ace of All Aerospace was becoming irritated. He *didn't* want to be tooling around the sky waiting for the honored citizen in the back to make up his mind. He *did* want to eat lunch with Brenda, and he *did* want to give center an answer. The wheels turning, the Magnificent Man quickly planned his strategies.

"Sam, call center and tell them we're going into La Guardia. Steward, tell old what's his name back there that we're going into La Guardia because of a precautionary engine shut down." Then he broke into a rare verse of "Oh Sweet Brenda."

"But boss, we don't have anything wrong with an engine!" cried Sam.

"You're right, dummy, but *he* doesn't know that. We'll just fake it and he'll never know the difference." The steward went back to inform the president and Sam called center, muttering that it'd never work.

In about two seconds the steward was back in the cockpit saying that the code one was acting irrational and talking in his native tongue. The only thing that he could understand was that he wanted a State Department official to meet the aircraft. C. R. paled a little as he wondered what was the matter with the old fellow.

"Sam, get back on side band and tell ops to have a State Department toad meet the airplane. Just tell 'em our passenger requested it. No sense in upsetting them with the facts." Sam rogered and then phone-patched ops.

"Hello, ops, this is SAM 490. Our code one requests that a State Department representative meet the airplane, over."

"Roger, anything wrong?" Ops inquired.

"Ah, negative, not that we know of." Sam replied.

"Okay, we'll contact Kennedy and have a rep there. Ops out."

"Wait a second, ops. We're going to La Guardia, not Kennedy," Sam tried to interject.

"SAM 490, this is Andrews. Ops is off the line, I'll pass the message."

"Roger, Andrews," Sam replied, "make sure they get the message or things will really be fouled up. 490 out."

* * *

As they pulled up in front of the terminal, seven minutes early, C. R. was telling Sam, "This is really first class living, isn't it, Sam." If we want to, after this tour we'll be able to get a job with some corporation as chief pilot. That's what most of the old heads have done." He paused and then continued, "Gee, Sam, I wonder what is keeping the protocol guys. They should have been johnny-on-the-spot. Humph, I'll have to report this to the wing commander."

"Here comes someone now," observed the engineer, pointing out the cockpit window. C. R. shut the engines down and the engineer opened the door to let the still-muttering president off. Then C. R. briefed the crew *not* to be back to the aircraft for at least an hour, and disappeared across the ramp with "I'll see you all later." The rest of the crew wandered into the terminal in search of a bite to eat.

* * *

"Any crewmember of SAM 490, please pick up a white courtesy telephone," came a page over the terminal intercom system. Sam quickly found a phone.

"Captain Sammy Jackson, sir. I'm the copilot on 490. Can I help you?" Sam politely answered.

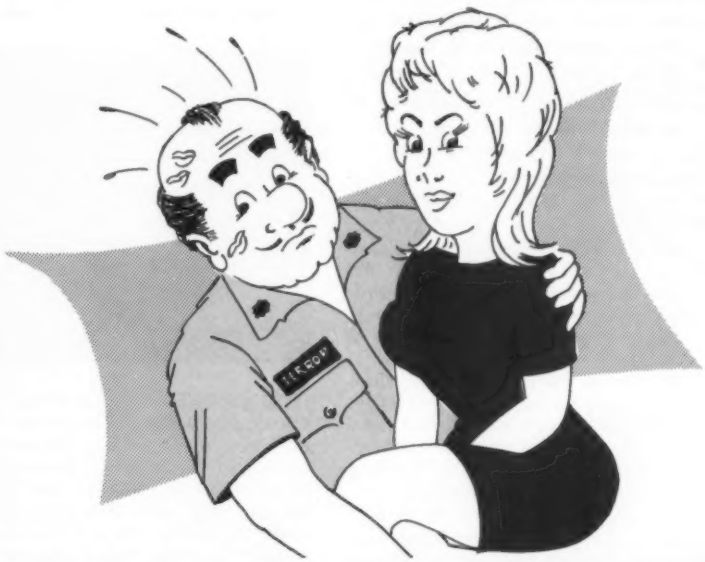
"Where's Major Terror?" came a loud booming voice over the receiver.

"Ah, he's eating lunch right now, sir. Who's calling?" Sam gingerly asked.

"This is your wing commander, Colonel Blackball. Find Major Terror and don't take off, do you understand? I'll be there in 30 minutes." And then he hung up.

* * *

Sam found C. R. at the same time Colonel Blackball found him, in the back of the JetStar eating hors d'oeuvres with Brenda and sipping one of his famous martinis. No wonder he didn't want us back to the aircraft for at least an hour, thought Sam.



"Major Terror, what is going on here?" bellowed the colonel. C. R. stumbled over himself trying to get up. Brenda slipped off his lap and fell to the floor as the Bald Baron of Bordellos sprang to attention.

"I, ah, ah, I" C. R. stammered. And the colonel cut him short.

"Major Terror, I've never seen anything like this in my entire life. This is despicable. You not only created an international incident by insulting President Olivia, but you blocked in seven minutes early, and we *never* block early. You had everyone in the State Department confused as to where you were going to land, and you faked an engine out emergency just so you could land here and have lunch with your girl friend." C. R. started to open his mouth as if astonished that the colonel knew any of this. "Yes, I know all about your whole escapade. President Olivia called me personally and told me what happened. You see, you left the intercom switch to the cabin on, and he heard everything you said. Major Terror, you're fired!" Then he turned to his ops officer, whom he brought along to fly C. R.'s plane back, and commented "I can do that, you know," and escorted Brenda out of the airplane.

C. R., regaining some of his composure, turned to Sam and said, "Well, I guess I can look for that corporate job now."

Letters

Letters Letters

Back in January, when we began the Squawk Box column, we invited you to write to us. We waited — patiently — and were rewarded with a few kudos plus an occasional brickbat. Then came the April issue, which triggered the deluge. We were able to slip some of the comments into last month's "After Deadline." Here are more of the actual letters.

* * *

Dear TMF Editor:

If your figures in "Transports in Turbulence" are correct, we had all better batten down the hatches. Holy hurricane! Wind speeds from 250 to 400 knots in thunderstorms? Since kinetic energy varies as the square of the velocity, wind speeds in that range would be 100 times as destructive as those 25 to 40 knot gusts that usually accompany most thunderstorms. By the end of the summer there won't be a barn left standing over the entire country.

Capt D. G. LaForest
AF/XOOCOAC

* * *

★According to our AWS source, wind speeds of 250-400 knots are **possible**, but not common (as we incorrectly indicated), and they occur only in extremely severe thunderstorms which contain tornados. Winds of 100 knots or better are also possible in a typical mid-west thunderstorm which involves a mid-level jet stream. But most winds within the thunderstorm are under 100 knots, with most **surface winds** in the 25-40 knot range. The real bugbear, of course, is sharp vertical shear between strong up and down drafts.

* * *

Dear TMF Editor:

The Spring weather (*April*) pictures are very impressive, but the picture in the lower left corner on page 10 (*the hole in the sky*) does not show a dangerous or potentially dangerous situation. Meteorologists are not completely in agreement as to what causes this pattern.

The dominant speculation on this pattern suggests that it is a very high level altostratus or altocumulus deck with supercooled liquid drops forming the cloud. An aircraft or rocket penetrating the cloud deck could cause a few supercooled droplets to freeze and form ice crystals. The basic equilibrium of the cloud is then upset and more and more ice crystals form in a chain reaction, making a cirrus cloud within an altostratus or altocumulus cloud deck.

It isn't really a dangerous situation, unless you consider the destruction of altostratus and the formation of cirrus exceptionally violent.

Maj J. P. Ashman

★A former editor summed it well: "Gee, I didn't know that!"

* * *

Dear TMF Editor:

Your comment in April concerning Fleet Service is very unjust to all personnel, military and civilian, working in this section MAC-wide.

The statement, "It seems crewmembers won't write much, but they will speak," is a true statement if ever one was made. For many years, any statement made by "some" crewmembers concerning any alleged incident about the traffic complex has been taken as a verified and indisputable fact. This seems like the best time to say something in the defense of all personnel who are in charge of, or work in Fleet Service.

For their (crewmember) information, there is a MAC Form 79, "Aircraft Interior Cleaning Checklist," which requires the signature of the aircraft commander or his designated representative. This form also has a statement which reads, "I certify that I have inspected the cleaning and servicing indicated above, that it is complete and satisfactory." Why would any aircraft commander or representative sign a statement when service had not been provided? I feel that the aircraft commander should start checking some of the other forms which his representatives sign, because one of these days his aircraft may be out of balance.

To help keep "some" crewmembers off the backs of traffic personnel, especially Fleet Service, it would do some good if they read the duties outlined in Attachment 6 to MM 55-1. If these procedures are followed, there would be no need for an aircraft to leave any station "dirtier than when it arrived."

All personnel assigned to this command have a job to perform. When some personnel are disparaged against because of the job they are assigned to do, some parts of the military airlift mission will not be accomplished.

SMSgt C. H. Richards
MAC/DOZXM

★We checked with several recent C-141 aircraft commanders and they drew a blank on MAC Form 79. There's a good chance that there has been an open circuit in crew communication.

* * *

Letters Letters Letters Letters Letters Letters

★Here's more on the dirty airplane:

Dear TMF Editor:

The comment pertaining to an aircraft (C-141 or C-5, I presume) leaving a station dirtier than it had arrived is certainly hard to accept, especially to a man with 18½ years as a transporter and several years in fleet service.

For many years the MAC Form 79 has been used as a management tool to certify that an aircraft has departed in a state of cleanliness. MM 76-1, Vol I, para 15-8e, states that this form is to be prepared in duplicate, one copy will be presented to the aircraft commander or his designated representative for his inspection and approval. If the aircraft commander or his designated representative chooses to sign the form just for the sake of signing it, then shame on him.

I have had many hours in the air in several different types of aircraft. I know we have many loadmasters who are professionals in every respect and by the same token, we have some who are less professional. The same stands true for the transporter side of the fence (605-XX). I am well aware that our crewmembers are on call on a continual basis, and are in the air all hours of the night. Too, there are transporters who continue to work shift work, seven days a week. I also realize that the 605XX field does not receive any type of variable reenlistment bonus (VRB).

It's been my experience that ninety percent of transport aircraft depart their home base or any en route station with the crew galley trash container half full of dirty, oily rags and empty quart hydraulic cans, safety wire, etc. These are certainly not cleaning items used by Fleet Service. Remember, the MAC Form 79 is the answer.

I feel that we have very professional people at our CONUS ports and overseas MASSqs who are doing an outstanding job, especially out in the Pacific area. Any crewmember or transporter with comments, positive or negative, which pertain to any facet of the Fleet Service Operation, please send them to me.

MSgt J. R. Lockhart
MAC/DOZXM

★Any takers?

* * *

Dear TMF Editor:

I read your article, "It's No Longer a Man's World" and want to congratulate you. You really laid it on us dumb Doras this time and made us sound like a bunch of irritable broads, didn't you? When Captain Ayeframe wrote her letter to you regarding the hot cup item which depicted the silly caricature with the "BBs" and stripes on her sleeve, she had my heartiest support. The WAF Lib Council also backed her 100 percent, as you may well recall.

In some respects your article actually brought tears to my eyes. It was in regard to your description of our visit to your office which was just a little much! You made your staff sound so gallant, offering public retractions while they endured the slings and arrows we perpetrated upon them. I thought the negotiation meetings were conducted with good taste and decorum. We couldn't help it when your men had nervous breakdowns when all we WAF asked for was a fair share of the good jobs. Thank heaven, the very important staff person entered into the picture. He, no doubt, approved our new jobs based on our past proven capabilities. He also realized that WAF, the only *true* volunteers in the Air Force today, will play an important part in the all-volunteer force of the future.

As for his decision to give us some "good" jobs, let me bring you up to date on those which were effective 1 April:

● There are 10 WAF now flying the MAC line. They literally fly by the seat of their, ah, (parden the expression) pants. And when you men can swallow your pride and accept our assistance, we'll even help to alleviate the navigator shortage. (Some of us have had plenty of experience navigating our "better" half home after "happy hour"!)

● Lt Col Cleostra Pseudo, Deputy Safety Chief, was certainly well qualified for her assignment in the safety field. She had 14 years experience being awfully careful in almost everything.

● Major Samatha Strongwill, at the last report, was to replace C. R. Terror as the world's greatest pilot. Higher headquarters finally recognized that he was a bumbling buffoon; they did have the same date of rank, and she doesn't drink martinis.

● Sgt Flo Gage, the engineer type, had her picture published on the front page of the *AF Times* in her coveralls. The Chief WAF saw it, and Flo Gage is no longer with us.

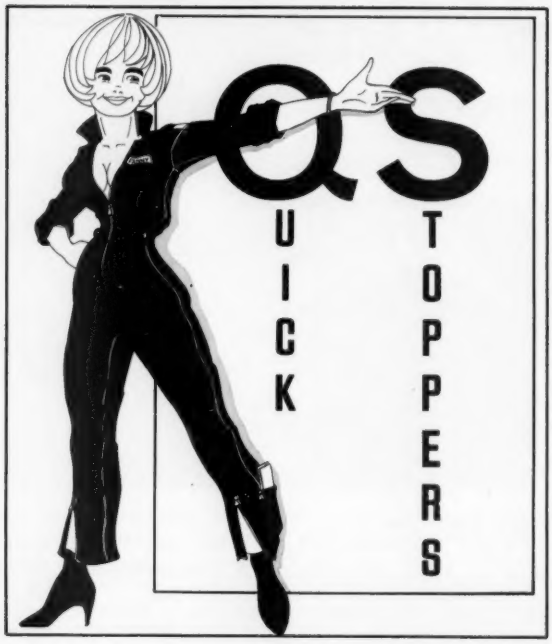
● Sgt Ima Beanburner, flight traffic specialist, has done such an outstanding job that all male flight traffic specialists have been replaced by WAF.

● And Major Hedda Cotton, whom you so generously appointed to your staff, will be your replacement effective immediately.

You see, we just took over - - - -.

Susan Anthonytype
Lt Col, Women's Air Force

★Yes, sir. Thank you, sir. Major Cotton is being good to us, sir.



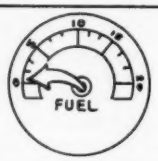
A Deep Sleep

A civilian pilot on a solo flight between two east coast airports fell asleep. When he awoke he was lost. He called for help and told them he was sure he had overflown his destination. After several radio transmissions, a DF bearing showed the sleepy pilot to be 55 miles out to sea, and southeast of his destination. Shortly after this, he called center and told them that his engine had quit from fuel starvation. His final transmission was, "I'm in the water."

The air and sea search was unsuccessful.

(Flight Safety Foundation)

Fuel For Thought



We recently experienced a mind boggling aero club incident that should be of interest to all who fly. Seems our intrepid aviator planned a VFR flight over mountainous terrain. His preflight and departure procedures were adequate, but he soon ran into weather problems and began circumnavigating cumulus build-ups.

After many turns, backtracks, climbs and dives and "what'll I do next"—he looked at the gas gages. Oh gads — only five gallons left in that tank—he switched tanks. Soon he broke into the clear after almost two hours of rain, turbulence, and negative contact with the outside world. But now he had another problem — he was lost and couldn't identify his position. He wasn't able to contact anyone or get his navigation equipment to lock on to anything.

Aha, he thought, implement plan B: find a ranch, set the bird down, and get some fuel. He found a ranch and picked out what he thought was a landing strip. One low pass and he discovered it wasn't. But with ten gallons of fuel remaining he then chose to land on a road. As he flared to land he noticed large rocks in the road and swiftly initiated a go-around. Too late — he touched down — so he pulled the power off and aborted the go-around. This maneuver cost him his left main gear. He then got out, walked to the ranch, phoned flight service to cancel his flight plan, and contacted his home base.

What did he do wrong? Well, he tried to use his radio aids below minimum reception altitudes, he proved inept at map reading, and he made an emergency landing with enough fuel remaining for two *hours* of cruise flight.

He could have sidestepped the whole mess by making an astute 180 as soon as the weather looked like more than he wanted to handle.

Flight Control Fiascos

Imagine the surprise of a Boeing 720 captain who accelerated 210,000 pounds of aircraft to 131 knots, applied back pressure to the yoke, and received no response. The yoke was frozen — it wouldn't move aft. Full reverse, and hard braking aborted the takeoff on the runway. Investigators found the elevator control crank installed upside down.

Another aerial ace found a flight control malfunction during the before takeoff flight controls check.

The pilot thought the ailerons seemed to be mushy about three-quarters through the turn of the yoke. Prior to takeoff, he again checked the controls — the yoke froze at the three-quarter turn position. He taxied back and maintenance found an incorrect, extra long screw securing the skin panel next to the aileron access panel. The screw was so long that it obstructed the left aileron input rod.

Hello-o-o-o, Murphy wherever you are!

Absent Sky Condition

Have you noticed the absence of reported sky condition or visibility on some Automatic Terminal Information Service (ATIS) broadcasts lately? As of 1 April, if the sky condition is 10,000 feet or above, or the visibility is seven miles or more, these items are deleted from the broadcasts.

Belted All The Way

Remember how that pretty little airline hostess *used* to recommend that you keep your seat belts loosely fastened after the seat belt sign was turned off? Well, it's no longer recommended — it's a Federal Aviation Regulation.

A recent study of non-fatal U.S. air carrier accidents showed that during 13 turbulent air incidents in 1971, 16 unrestrained passengers received serious injuries. This fact prompted the change from recommended to required.

The new regulation, FAR 121.571(a)(2), says "After each takeoff, immediately before or immediately after turning the seat belt sign off, an announcement shall be made that passengers should keep their seat belts fastened, while seated, even when the seat belt sign is off."

They are stressing *fastened* and not *loosely fastened*. We think this is a good idea and is applicable to MAC. What do you think?

(Adapted from American Airlines Flight Deck)

Yoke Travel No Joke

Rotate! The speed was right, so the pilot pulled back on the yoke — but nothing seemed to happen. He pulled some more, but it was very difficult. Finally, the Starlifter leaped off and the crew gave a sigh of relief. The pilot declared an emergency, notifying the tower that he had binding flight controls on takeoff. He then made a normal, uneventful landing.

Investigators found a piece of safety wire jammed between the elevator control cable and pulley. They questioned the pilot, who said he noticed some stiffness during the control check, but regarded it as no worse than many other '141s.

We'll ask two questions. First: if you have any doubts about control responses before takeoff, would you press on? And second: as far as we know, the investigators didn't question where or how the safety wire got there. Do you have any ideas?

Vice President on the Right

Copilots, do you know that you are the key staff man on your crew? Any aircraft commander, like a big business executive, has a staff to advise him, point out errors, and make recommendations. But when the decision time comes it's all his bag. Being a good staff officer, you must always advise him and not hold anything back. This is especially true in the cockpit of your aircraft.

One airline states its cockpit staff's responsibility and relationships as follows:

> "First officers are charged with the responsibility to inform the captain immediately, and at any time, should they believe an aircraft is being handled improperly or placed in jeopardy. The captain may choose to disregard a first officer's counsel (such is command privilege), but no matter to what degree or how often a first officer's advice to his captain may be disregarded or ignored, the first officer nevertheless will be held responsible for always offering such advise."

(Note for copilots: As in the case of most staff officers, your lot as a copilot is a vital though perhaps seemingly thankless one.)

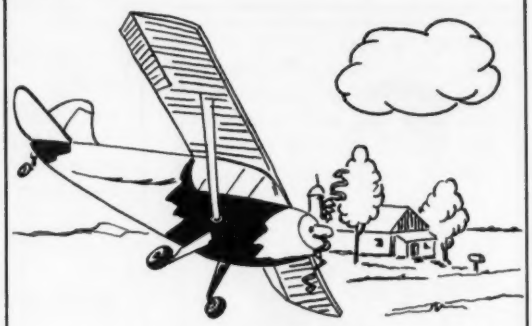
(Courtesy FSF via NAC Safety Digest)

Glossary of Aviation Terms

Air Carrier — Any container or vehicle used primarily for carrying air.
Buffeting — Eating dinner while standing up.
Bulkhead — A derogatory expression usually applied to persons of questionable intelligence.
Dzus — Ancient Greek god.
Louver — French term meaning lover.
Pylon — All aboard.
Skin drag — A dance held at a nudist colony.
Terminal velocity — Speed limit at an airport.
Thermocouple — newlyweds
Wing flap control — Device to control flapping of the wings.

(Lt Col P. Krey)

Aero Clobber



We've all heard of the solo student pilot that landed his aircraft on a highway, in a cow pasture, or on a parking lot after finding himself low on fuel or temporarily disoriented. And after getting fuel, directions, or both, he then proceeded to take off and return to the home drome with nothing worse than a badly shaken pride.

Unfortunately, most of these incidents usually don't end quite this well. If the student happened to be fortunate enough to get the aircraft and himself on the ground in one piece, he more than likely would break something when he attempted the takeoff. Just to prove that there's nothing new in the world of aviation, we had an aero clubber try to relive the legend — with nearly disastrous results.

The student, on his third solo, experienced what he described as carb icing with a subsequent loss of power. He made a successful "flame out" landing on a deserted beach. After assessing the situation and applying all the expertise accrued through his grand total of thirty hours flying time, he turned the aircraft around and attempted a take off. Unfortunately, the ensuing takeoff was less successful than his emergency landing. The aircraft ended up on its back in three feet of water, with an incoming tide. The student got out unscratched, but the airplane was converted into small pieces by the salvage crew and surf.

Moral of the story of how to go from hero to goat in two minutes: If you are fortunate enough to get it on the ground safely — leave it there and get help!

(Capt Gary Beson, 437 MAWg)

after deadline . . . .

OXYGEN OR AIR? -- In a May article we reported a Fuel Tank Fiasco where an airman was overcome by JP-4 fumes; we said that the fire department had pumped oxygen through the fuel lines in an attempt to revive him. "Not so," said a source from Hanscom Field. "Pure oxygen plus fuel fumes equals instant bad news; can you check?" We tried -- but the unit has been disbanded and the people all reassigned. Our fire department sources indicate that a Scott Air Pack was most likely used, and this would have pushed compressed air, not pure oxygen, through the tank. Apparently, the story should have read, "The fire department tried to get oxygen to the man by using a blast of compressed air." More on this later.

EDITOR'S CHOICE -- Last December we picked the best volunteer manuscript published during 1971 and gave the author special recognition. This year we plan to do the same. Have you sent in your manuscript yet? Last date for December publication: 6 October.

KUDOS AND FELICITATIONS -- Congratulations to PACAF/IGYE. In July, they published the first issue of THE PACAF PROFESSIONAL, resurrected from the ashes of the defunct PACAF FLYER. The magazine staff has made a tremendous first effort. (The address, in case TMF readers need it: Editor, THE PACAF PROFESSIONAL, HQ PACAF, APO San Francisco 96553.)

CRUNCH -- We've had two C-5s land short recently, both at night. Tentative causes: runway illusions, approach techniques, and dropping below glide path after going visual. The gear sticks far below the cockpit level and, at a deck angle of several degrees, the crew can cross the fence at 40 feet while their bird's wheels eat up approach lights. A briefing prepared by MAC/DOT is in the field -- we'll offer an extended discussion later. For now, please be extra careful.

COMING ATTRACTIONS -- Headline features for September include some classics on avoiding taxi mishaps, conserving comm radio time, and improving integrity for the working man, plus survival tips for autorotators and mission support fliers.

the ANALYZER